

Permit No.: 41-03-CDLF-1998

Draft Permit to Operate
City of Greensboro – Phase II C&D over MSW

Month dd, 2012

Document ID No. 16015

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# North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue Governor Division of Waste Management
Dexter R. Matthews
Director

Dee Freeman Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

# SOLID WASTE MANAGEMENT FACILITY Permit No. 41-03-CDLF-1998

CITY OF GREENSBORO (LANDOWNER AND OPERATOR)

is hereby issued a

### PERMIT TO OPERATE

CITY OF GREENBORO – WHITE STREET LANDFILL, PHASE II

(A C&D LANDFILL UNIT OVER A CLOSED MUNICIPAL SOLID WASTE LANDFILL)

AND

POST-CLOSURE CARE REQUIRMENTS FOR THE CLOSED UNLINED MSW UNIT

Located at 2503 White Street, Greensboro, Guilford County, North Carolina, in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The legal description of the site is identified on the deeds recorded for this property listed in Attachment 1, Part III of this permit.

Edward F. Mussler, III, P.E. Permitting Branch Supervisor Solid Waste Section

1646 Mail Service Center, Raleigh, North Carolina 27699-1646 Phone: 919-707-8200 Internet: http://portal.ncdenr.org/web/wm/sw

North Carolina Naturally

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#### **ATTACHMENT 1**

# **Part I: Permitting History**

- 1. The City of Greensboro previously operated the White Street Sanitary Landfill, Phase II as a municipal solid waste landfill (MSWLF) under Permit 41-03. The landfill was constructed without a liner below the waste. The landfill operation began in the late 1970s. The facility ceased receiving waste in some areas prior to October 9, 1991. The footprint of the filled areas was 135 acres. 45 acres were permanently closed and covered with two feet of soil in accordance with the permit. The areal limit after October 9, 1991, and before October 9, 1993, was 90 acres.
- 2. A transition plan was approved for the MSWLF in 1996. The plan was revised in 1997 to include the construction and operation of a construction and demolition solid waste landfill (C&DLF) over the closed MSWLF. Twenty- five (25) acres were permanently closed with two feet of clay and six inches of soil. A vertical expansion over the closed MSWLF was permitted for construction and demolition (C&D) waste disposal with an area of 65 acres and maximum elevation of 872 feet above mean sea level.
- 3. The permit actions listed below are for the operation of the C&DLF on top of the closed MSWLF.

Permit	Date Issued	Document ID
Permit to Operate (PTO) – Stage I	January 7, 1998	
PTO Modification – Stage II	October 7, 1998	
PTO Modification – Stage III	April 15, 2000	
PTO Amendment – Continued Operation	May 25, 2006	
PTO Amendment – Continued Operation (Rule .0547)	Month dd, 201X	16015

# Part II: List of Documents for the Approved Plan

- Site and Construction Transition Plan modification application for the City of Greensboro
  White Street Landfill, Permit #41-03. Document titled "City of Greensboro Environmental
  Services Department Solid Waste Management Division White Street Landfill
  Construction/Demolition Permit Application" for the City of Greensboro dated 16 December
  1997.
- 2. Partial closure certification letter dated 5 January 1998 from Olver, Inc. for Stage I of the Phase II area.
- 3. Certification Drawing from Olver Inc. and the City of Greensboro. January 7, 1998.

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- 4. Partial closure certification from Olver, Inc. for the Stage II Area of Phase II. July 23, 1998.
- 5. Document titled "White Street Sanitary Landfill Phase II Closure" submitted by Olver, Inc., dated March 1999.
- 6. Document titled "City of Greensboro Environmental Services Department Solid Waste Management Division White Street Landfill Construction/Demolition Permit Application" for the City of Greensboro dated 27 September 2002 requesting an extension to operate the C&D over MSW Unit in the Phase II area of the White Street Landfill.
- 7. Letter dated October 3, 2003, from the City of Greensboro Environmental Services Department providing an update on the existing conditions of the C&D over MSW Unit and submitting adjusted proposed final fill contours through 2009 (Drawings CD-79, CD-80, and CD-81 included).
- 8. Letter dated February 22, 2005, from the City of Greensboro Environmental Services Department providing an update on the existing conditions of the C&D over MSW Unit and submitting proposed fill contours for an additional six years of capacity through 2011 by maximizing side slopes at 4:1 [Drawings CD-79A (1 of 7) to CD-85A (7 of 7) included].
- 9. Water Quality Monitoring Plan, White Street Landfill, Phase I and II Areas, White Street, Greensboro, North Carolina. Prepared by S&ME. Greensboro, NC. December 2007. DIN 4314.
- 10. Letter to Ms. Jeryl Covington, City of Greensboro Environmental Services Department, Approval of Water Quality Monitoring Plan. April 4, 2008. DIN 4315.
- 11. Letter to Ms. Jeryl Covington, City of Greensboro Environmental Services Department. Approval of Selected Remedy. June 24, 2008. DIN 4970.
- 12. White Street Landfill Phase II, Corrective Action Plan, Greensboro, North Carolina. Prepared by S&ME. Greensboro, NC. June 19, 2008 as revised through April 30, 2009. DIN 7393.
- 13. Letter to Ms. Jeryl Covington, City of Greensboro Environmental Services Department. Approval of Corrective Action Plan. May 14, 2009. DIN 7422
- 14. Letter from Ms. Jeryl Covington, City of Greensboro Environmental Service Department. Letter discussed closure of areas that have reached final grade and are no long receiving waste. August 11, 2010. DIN 11938.
- 15. White Street Landfill, Construction & Demolition Landfill Permit Application. Prepared by City of Greensboro. Received June 27, 2008. DIN 10204. Revised by HDR Engineering, Inc. of the Carolinas, Charlotte, NC. through November 14, 2011. DIN 15784.

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### Part III: Location of Solid Waste Facility

The solid waste facility approved under this permit is located on portions of the properties described in the following deeds.

Guilford County, NC Register of Deeds							
Book	Page	Grantor	Grantee	Acres			
2097	344	C.A. Keeley & wife, Helene R. Keeley	City of Greensboro	86			
2097	346	C.A. Keeley & wife, Helene R. Keeley	City of Greensboro	83			
3043	858	Florence B. Briggs City of Greensboro		44			
2905	092	J. L. Sutphin	J. L. Sutphin Guilford County 10				
3452	004	Jack F. Brafford, et.al.	City of Greensboro	9			
			Total Acres	323			

The area originally permitted for the MSWLF was 135 acres. The area permitted for the C&DLF is approximately 65 acres. Thirty-eight acres are at or within 15 feet of the final permitted grade and no longer receive waste.

### Part IV: General Permit Conditions

- 1. This permit is issued by the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (Section). In accordance with North Carolina Solid Waste Management Rule 15A NCAC 13B .0201(d), a solid waste management facility permit shall have two parts: a Permit to Construct and a Permit to Operate. A Permit to Construct is not included. The Permit to Operate shall be implemented in accordance with Attachment 3 of this permit. The Permit to Operate shall expire Month dd, 201Y.
- 2. The persons to whom this permit is issued ("permittee") are the owners and operators of the solid waste management facility.
- 3. This permit shall not be effective unless the certified copy of this permit is recorded in the Register of Deeds' office and indexed in the grantor index under the name of the owner of the land in the county or counties in which the land is located. The certified copy of the permit, affixed with the Register's seal and the date, book, and page number of recording must be returned to the Division of Waste Management within 30 calendar days. If the Section does not receive the certified copy of the recorded permit within 30 calendar days of issuance of the permit, then and in that event, the permit is suspended and of no effect until the date the Section received the certified copy of the recorded permit.

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- 4. When this property is sold, leased, conveyed, or transferring in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a sanitary landfill and a reference by book and page to the recordation of the permit.
- 5. By receiving waste at this facility the permittee shall be considered to have accepted the terms and conditions of this permit.
- 6. Operation of this solid waste management facility shall be in accordance with the North Carolina Solid Waste Management Rules, 15A NCAC 13B; Article 9 of the Chapter 130A of the North Carolina General Statutes (NCGS 130A-290, et seq.); the conditions contained in this permit; and the approved plan. Should the approved plan and the rules conflict, the Solid Waste Management Rules shall take precedence unless specifically addressed by permit condition.
- 7. This permit is issued based on the documents submitted in support of the application for permitting the facility including those identified in Attachment 1, "List of Documents for Approved Plan," and which constitute the approved plan for the facility. Where discrepancies exist, the most recent submittals and the Conditions of Permit shall govern.
- 8. This permit may be transferred only with the approval of the Section, through the issuance of a new or substantially amended permit in accordance with applicable statutes and rules. In accordance with NCGS 130A-295.2(g) the permittee shall notify the Section thirty (30) days prior to any significant change in the identity or business structure of either the owner or the operator, including but not limited to a proposed transfer of ownership of the facility or a change in the parent company of the owner or operator of the facility.
- 9. The permittee is responsible for obtaining all permits and approvals necessary for the development of this project including approval from appropriate agencies for a General or Individual National Pollutant Discharge Elimination System Stormwater Discharge Permit. Issuance of this permit does not remove the permittee's responsibilities for compliance with any other local, state or federal rule, regulation, or statute.

- End of Section -

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### **ATTACHMENT 2**

### **Conditions of Permit to Construct**

1. Construction of any C&DLF future phases or cells or changes to the approved landfill design will require written approval of the Section. An application for a Permit to Construct must be prepared in accordance with applicable statutes and rules in effect on that date and may be subject to a permitting fee.

-End of Section-

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#### **ATTACHMENT 3**

### **Conditions of Permit to Operate**

# **Part I: Operating Conditions**

- 1. This Permit to Operate shall expire **Month dd, 201Y**. Pursuant to 15A NCAC 13B .0201(g), no later than **(Month -6) dd, 201Y**, the permittee must submit to the Section:
  - a. A permit amendment prepared in accordance with 15A NCAC 13B .0535(b), and
  - b. A Corrective Action Evaluation Report to demonstrate the effectiveness of the implemented corrective action program in accordance with 15A NCAC 13B .0547(4)(c) and the approved Corrective Action Plan (Attachment 1, Part II, Document 12)(DIN 7393).
- 2. This permit authorizes the continued operation of the Phase II C&DLF on top of the closed MSWLF, as well as the on-site environmental management protection facilities as described in the approved plans. Operation of any C&DLF future phase or cell will require written approval of the Section and must be constructed in accordance with applicable statutes and rules in effect at the time of review.
- 3. This facility is permitted to receive C&D waste generated in with the City of Greensboro and Guilford County, consistent with local government waste management plans and local government approval.
- 4. The permittee must maintain permanent markers that accurately identify the outermost edge of the approved waste disposal boundary.
- 5. The total gross capacity of Phase II, C&DLF on top of closed MSWLF is 2,525,443 cubic yards. Total gross capacity is defined as the volume measured from the bottom of waste through the top of final cover. The estimated remaining gross capacity as of June 27, 2010, was 1,327,604 cubic yards.
- 6. The annual waste disposal is estimated at 46,614 tons per year. Based on a waste density placement of 1,700 pounds per cubic yard and a periodic cover to waste ratio of 10%, the volume filled per year is approximately 55,000 cubic yards. The estimated landfill capacity and life expectancy is shown in the following table.

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### Estimated Landfill Capacity and Life Expectancy

	Area (Acres)	Gross Capacity (Cubic Yards)	Life Expectancy (Years)
Landfill Permitted	65	2,525,443	
Remaining - June 27, 2010	65	1,327,604	20.4
Lift 1 – Remaining		77,870	1.4
Lift 2		260,000	4.75
Lift 3		260,000	4.75
Lift 4		260,000	4.75
Lift 5		260,000	4.75
Closure	65	209,734	

- 7. The C&DLF is permitted to receive the following waste types:
  - a. "Construction and demolition debris" as defined in NCGS 130A-290(a)(4) means solid waste generated solely from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures, but does not include inert debris, land-clearing debris or yard debris.
  - b. "Inert debris" as defined in NCGS 130A-290 (a)(14) means solid waste that consists solely of material such as concrete, brick, concrete block, uncontaminated soil, rock, and gravel.
  - c. "Land-clearing debris" as defined in NCGS 130A-290 (a)(15) means solid waste which is generated solely from land-clearing activities, limited to stumps, trees, limbs, brush, grass, and other vegetative material.
  - d. "Asphalt" in accordance with NCGS 130-294(m).
- 8. "Yard trash" as defined in NCGS 130A-290(a)(45) shall not be disposed in the C&DLF unit. However, yard trash, along with land-clearing debris, may be accepted for processing in the compost area under Permit 41-03-Compost.
- 9. Regulated asbestos containing material as defined in 40 CFR 61 must be managed in accordance with 40 CFR 61. Disposal of asbestos waste must be managed in accordance with 15 NCAC 13B .0542(c).

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- 10. Those wastes listed in 15A NCAC 13B .0542 (e) must not be accepted for disposal, including, but not limited to, hazardous waste, municipal solid waste, liquid waste, commercial or industrial wastes, and yard trash.
- 11. Wastewater treatment sludge is not approved for disposal. Wastewater treatment sludge may be accepted, with the approval of the Section, for utilization as a soil conditioner and incorporated into or applied onto the vegetative growth layer. The wastewater treatment sludge must not be applied at greater than agronomic rates or to a depth greater than six inches
- 12. The permittee must not knowingly dispose of any type or form of solid waste that is generated within the boundaries of a unit of local government that by ordinance:
  - a. prohibits generators or collectors of municipal solid waste from disposing of that type or form of municipal solid waste, or
  - b. requires generators or collectors of municipal solid waste to recycle that type or form of municipal solid waste.
- 13. The facility operator must complete an approved operator training course in compliance with NCGS 130A-309.25.
  - a. A responsible individual certified in landfill operations must be on-site during all times of operation to ensure compliance with operational requirements.
  - All pertinent landfill-operating personnel must receive training and supervision necessary for proper operation of the landfill units in accordance with NCGS 130A-309.25 and addressed by memorandum dated November 29, 2000.
- 14. The permittee must actively employ a training and screening program at the facility prepared in accordance with 15A NCAC 13B .0544(e) for detecting and preventing the disposal of excluded and unauthorized wastes. At a minimum, the program must include:
  - a. random inspections of incoming loads or other comparable procedures;
  - b. records of all inspections;
  - c. training of personnel to recognize hazardous, liquid, and other excluded waste types; and
  - d. development of a contingency plan to properly manage any identified hazardous, liquid, or other excluded or unauthorized wastes. The plan must address the identification, removal, storage, and final disposition of these wastes.
- 15. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act NCGS 113A-50, et seq., and rules promulgated under 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.

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- 16. Modifications to the approved sedimentation and erosion control activities require approval by the North Carolina Land Quality Section. The Section must be notified of any sedimentation and erosion control plan modifications.
- 17. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 401 and 404 of the Clean Water Act, as amended.
- 18. Financial assurance must be continuously maintained for the duration of the facility in accordance with Rules 15A NCAC 13B .0547(4)(e), 15A NCAC 13B .1648, and NCGS 130A-295.2(h). During the active life of the facility, the permittee must annually adjust the financial assurance cost estimate for inflation and submit the revised estimate to the Section at least 60 days prior to the annual anniversary date of the establishment of the financial instrument.

### **Cover Material Requirements**

- 19. Solid waste shall be covered with a minimum of six inches of soil or an approved material of equivalent performance and thickness at least once per week or when the active area reaches one-half acre in size, or more often when necessary to prevent the site from becoming a visual nuisance or to mitigate conditions associated with fire, windblown materials, vectors, or excessive water infiltration.
- 20. Areas that will not receive additional waste for three months or more, but where final termination of disposal operations has not occurred, must be covered and stabilized with vegetative ground cover or other stabilizing material.
- 21. The use of alternative daily cover requires approval, prior to implementation, by the Section. Requests for use alternative daily cover material must include a plan detailing the storage, composition, and application of the material and a demonstration of the effectiveness of the alternative daily cover. The plan must be developed according to Section guidelines. Plans which are approved by the Section will be incorporated into the approved documents listed in Attachment 1.

### **Access and Safety**

- 22. The facility shall be adequately secured by means of gates, chains, berms, fences, or other security measures approved by the Section to prevent unauthorized entry.
- 23. The access road to the CDLF unit shall be of all-weather construction and maintained in good condition.
- 24. Signs must be posted at the facility that state no hazardous waste or liquid waste can be received at the facility and provide information on handling procedures, hours of operation,

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the permit number, and other pertinent information. Traffic signs or markers must be provided as necessary to promote an orderly traffic pattern to maintain efficient operating conditions.

- 25. Dust control measure shall be implemented as necessary.
- 26. Open burning of solid waste is prohibited. Fires must be reported to the Solid Waste Section by phone within 24 hours of an incident and written notification shall be submitted within 14 working days addressing the events at the site and future actions to be taken in the future to avoid and or mitigate potential fire hazards.
- 27. The removal of solid waste from the facility is prohibited unless the owner/operator approves and the removal is not performed on the working face. If C&D recycling is to take place, a permit for a processing facility must be obtained.
- 28. The facility will implement a routine methane monitoring program to ensure that methane concentrations to not exceed 25 percent of the lower explosive limit (LEL) in facility structures, or 100 percent of the LEL at property boundaries. Monitoring, record keeping, and response to the levels stated will be in accordance with the approved plan.

#### **Erosion and Sedimentation Control**

- 29. Adequate sedimentation and erosion control measures shall be practiced to prevent silt from leaving the site of the CDLF.
- 30. Adequate sedimentation and erosion control measures shall be practiced to prevent excessive on-site erosion
- 31. Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of CDLF development consistent with Rule .0543(c)(5).

### **Drainage Control and Water Protection Requirements**

- 32. Surface water shall be diverted from the operational area.
- 33. Surface water shall not be impounded over or in waste.
- 34. Solid waste shall not be disposed in standing water.
- 35. Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to discharge of leachate to surface waters and or for land disturbing activities greater than one acre.

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## Recordkeeping

- 36. Copies of this permit, the approved plans, and all records required to be maintained by the permittee must be maintained at the facility, unless otherwise approved by the Section, and made available to the Section upon request during normal business hours.
- 37. The permittee must maintain a record of the amount of solid waste received at the facility, in accordance with the approved documents, Attachment 1, Part II. Scales must be used to weigh the amount of materials received, recovered, and disposed. The daily records should be summarized into a monthly report for use in the required annual reports.
- 38. The permittee must maintain records for all solid waste materials accepted as alternative cover material and used as alternate daily cover. The records must include: the date of receipt, weight of material, general description of the material, identity of the generator and transporter, and county of origin. Such records must be made available to the Section upon request.
- 39. On or before August 1 of each year, the permittee shall submit an annual report of the amount of waste received and disposed at this facility to the Section and to all counties from which waste was accepted. The report shall be on forms prescribed by the Section. Reporting requirements include the following:
  - a. The reporting period shall be for the previous year beginning July 1 and ending June 30.
  - b. The annual report shall list the amount of waste received and landfilled in tons and be complied: on a monthly basis;
    - i. by the county, city, or transfer station of origin of the waste;
    - ii. by the specific waste type;
    - iii. by the disposal location within the facility; and
    - iv. by diversion to alternative management facilities.
  - c. A copy of the completed report shall be forwarded to the County Manager of each county from which waste was received.
  - d. A copy of the report and documentation that a copy of the report has been forwarded to all counties from which waste was accepted must be sent to the regional Waste Management Specialist by the date due on the prescribed annual report form.

## Part II: Groundwater and Surface Water Monitoring

- 40. Groundwater and surface water monitoring shall be conducted in accordance with Rules .0544 and .1630, and approved monitoring plans.
- 41. Sampling equipment and methods should conform to specifications within the document titled *Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling* dated April 2008. This document is available from the Section.

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- 42. Groundwater quality is subject to 15A NCAC 2L Groundwater Classifications Standards and/or Groundwater Protection Standards established under Rule .1634(i). Surface water is subject to 15A NCAC 2B Surface Water and Wetlands Standards.
- 43. The groundwater treatment system must be implemented, operated, and maintained as specified in the Corrective Action Plan (CAP), Attachment 1, Part II, Document 12, DIN 7393. The CAP was developed in accordance with Rules .1635 through .1637 to remove contaminants from the groundwater and to monitor the migration of hazardous constituents. The approved groundwater treatment system consists of Monitored Natural Attenuation (MNA) and Phytoremediation, and this selected remedy was approved on June 24, 2008, DIN 4970. Any modification to the approved CAP must be reviewed and approved by the Section.
- 44. Institutional controls (land use restrictions) will be imposed as part of a groundwater treatment system consisting of Monitored Natural Attenuation. The land use restrictions will be imposed on the permitted facility and any buffer that has been acquired to help ensure that the migration of contaminated groundwater, surface water, and landfill gas is confined to property owned and controlled by the responsible party.
- 45. The monitoring well locations specified in the approved plans shall be established to monitor groundwater.
  - a. A readily accessible, unobstructed, path shall be maintained so that monitoring wells may be accessed using four-wheel drive vehicles.
  - b. The permittee must obtain approval from the Section for the design, installation, and abandonment of any monitoring well.
  - c. A licensed geologist must be present to supervise the installation of groundwater monitoring wells. The exact locations, screened intervals, and nesting of the wells shall be established after consultation with the Section hydrogeologist at the time of well installation.
  - d. Each monitoring well shall be surveyed for location and elevation. In addition, hydraulic conductivity and effective porosity values shall be established for each screened interval in order to develop groundwater flow characteristics.
  - e. Within thirty (30) days of the completed construction of each new ground-water monitoring well, the well construction record (GW-1b form), well schematic, boring log, field log and notes, and description of well development activities must be submitted to the Section.
  - f. Within thirty (30) days of the completed permanent abandonment of a ground-water monitoring well, the well abandonment record (GW-30 form) and any additional information included in the abandonment record must be submitted to the Section. The well abandonment records must be submitted to the Section in accordance with 15A NCAC 2C .0114(b) and be certified by a Licensed Geologist.
  - g. Documentation of well completion or abandonment must be placed in the operation record.

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- h. Each monitoring well must have an identification plate permanently attached to the well, in accordance with 15A NCAC 2C .0108(o).
- 46. The permittee shall train all personnel operating the groundwater treatment system as outlined in the approved CAP.
- 47. The permittee must sample groundwater and surface water as directed in the Water Quality Monitoring Plan or as otherwise directed in writing by the Section Hydrogeologist. For this permit, the Water Quality Monitoring Plan includes required water quality monitoring for the C&DLF and corrective action. A record of each sampling event must be placed in the facility operating record.
- 48. Reports of the analytical results for surface and groundwater quality monitoring sampling events must be submitted to the Section within 120 days of the sample collection date. Analytical data must be submitted in a manner prescribed by the Section.
- 49. All monitoring reports must contain
  - a. an evaluation of the potentionmetric surface for the current monitoring event containing the locations of groundwater monitoring wells, landfill gas monitoring wells, and surface water sampling points,
  - b. analytical laboratory reports and summary tables,
  - c. a completed Solid Waste Environment Monitoring Data Form, and
  - d. laboratory data submitted in accordance with the Electronic Data Deliverable (EDD) Template.
- 50. An EPA-approved Monitored Natural Attenuation (MNA) screening model is required at least annually to simulate the groundwater corrective action at the facility and determine the mass flux and mass balance of the groundwater treatment system.
- 51. The permittee shall provide a summary of the effectiveness of the groundwater treatment system as indicated in the approved CAP. A modification to the CAP may be required based on the effectiveness of the treatment.
- 52. If failure of the groundwater treatment system has resulted in a release of contaminants, the Contingency Plan in the approved CAP will be immediately implemented and adjacent property owners will be immediately notified in writing.
- 53. The permittee shall continue to treat the groundwater until such time that the selected remedy is consider complete as specified in Rule .1637(e).
- 54. All groundwater, surface water, corrective action program, and landfill gas monitoring forms, reports, maps, plans, laboratory data, and correspondence submitted to the Section must include an electronic (pdf or tiff) copy.

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55. The permittee must maintain a record of all monitoring events and analytical data in the permanent facility record.

## Part IV: Landfill Gas Monitoring Requirements

- 56. The owner and/or operator shall monitor landfill gas to ensure that:
  - a. The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and
  - b. The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.
- 57. A routine landfill gas monitoring program must be implemented in accordance with an approved landfill gas monitoring plan which shall include contingency plans. Landfill gas monitoring should occur at least on a quarterly basis. Any proposed modification to an approved landfill gas monitoring plan shall be submitted to the Section and approved prior to implementation. Guidelines, available from the Section, can be found in the document titled *Landfill Gas Monitoring Guidance* dated November 2010.
- 58. All landfill gas monitoring must be conducted by properly trained personnel and all landfill gas monitoring equipment shall be calibrated according to the manufacturer's specifications. Verification of the calibration of the landfill gas monitoring equipment is required. Landfill gas monitoring must include the interior monitoring of any on-site buildings and structures.
- 59. Landfill gas monitoring results must be recorded on forms provided by the Section and be maintained in the facility's operating record. The form shall include the following: facility name, permit number, type and serial number of gas monitoring instrument, calibration date of the instrument, date and time of field calibration, type of gas used for field calibration (15/15 or 35/50), expiration date of field calibration gas canister, date of landfill gas monitoring event, name and position of sample collector, pump rate of instrument being used, ambient air temperature, and general weather conditions.
- 60. Within thirty (30) days of the abandonment of a landfill gas monitoring well, an abandonment record must be submitted to the Section. The boring must be abandoned in accordance with 15A NCAC 2C .0113(d) and be certified by a Licensed Geologist.

#### Part V: Closure and Post Closure

61. The permittee must conduct closure and post-closure activities in accordance with the approved plans and 15A NCAC 13B .1627. An updated closure and post-closure plan must be submitted to the Section for approval at least 90 days prior to closure or partial closure of any landfill unit. The plan must include all steps and measures necessary to close and maintain the unit in accordance with all rules in effect at that time. At a minimum, the plan must address the following:

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- a. design of a final cover system in accordance with 15 NCAC 13B .1627(c), or the solid waste management rules in effect at the time of closure;
- b. construction and maintenance/operation of the final cover system and erosion control structures; and
- c. surface water, ground water, and explosive gas monitoring.
- 62. If the minimum 30-year post-closure period ends before the groundwater corrective action program is terminated, the post-closure care period shall be extended at least until such time as the required corrective action program has been completed pursuant to 15A NCAC 13B .1627(d)(2)(B).

- End of Permit Conditions -